



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,391	08/20/2003	Jens-Wolf Jaisle	DKT02106	6133

7590 04/12/2005

BorgWarner, Inc.  
PATENT ADMINISTRATOR  
3850 HAMLIN ROAD  
Auburn Hills, MI 48326-2872

EXAMINER

TRIEU, THAI BA

ART UNIT	PAPER NUMBER
----------	--------------

3748

DATE MAILED: 04/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/644,391

Applicant(s)

JAISLE, JENS-WOLF

Examiner

Thai-Ba Trieu

Art Unit

3748

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 18-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 18-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. ____.  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.   | 6) <input type="checkbox"/> Other: ____.                                    |

### DETAILED ACTION

The Preliminary Amendment filed on August 20, 2003 is acknowledged. Claims 1-17 were cancelled, and claims 18-34 were added.

### *Drawings*

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the ***“a separate flow duct leading to each of the bearings”*** (See Claim 21), ***“further flow ducts formed in the housing”*** (See Claim 22); ***“the bearing gaps having air stream applied independently of one another”*** (See Claim 30) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New

Art Unit: 3748

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

1. The disclosure is objected to because of the following informalities:

- On Page 3, Paragraph [0006], "*in order to achieve... patent claims 1 and 10 are proposed... from the dependent claims*" should be revised, since claims 1 and 10 had been cancelled by the Preliminary Amendment filed on August 20, 2003.

Appropriate correction is required.

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Specifically,

- In claim 22, line 3, the recitation of "***further flow ducts formed in the housing***" lacks antecedent basis in the specification.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claim 18 and its dependent claims 19-26; and claim 27 and its dependent claims 28-34 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Specifically:

- In claim 18, lines 2-3, and claim 27, lines 3-4, the recitation of ***“to be capable of rotating”*** renders the claim indefinite, since it is not clear that under which condition the shaft of turbocharger can rotate along its longitudinal axis in the housing, and under which condition the shaft cannot rotate. Applicant is required to identify these conditions.

- In claim 18, line 12, the recitation of ***“can have an air stream applied to it”***; and in claim 31, line 3, the recitation of ***“the air stream applied to them serially”*** render the claims indefinite, since it is not clear that under which condition one bearing can have an air stream applied to which element(s) that applicant wants to reference to, and under which condition the shaft cannot have an air stream. Applicant is required to clarify these conditions and identify the element(s) that air stream will be applied to.

- In claim 23, line 3, the recitation of “preferably” renders the claim indefinite, since it is not clear that why the flow duct has to lead to the turbine wheel side bearing? or in which condition the turbine wheel side bearing needs to be cooled down by the air in the flow duct?

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

***Claims 18-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hassler (Patent Number DE 100 40 508 A1), in view of Andres et al. (Patent Number 5,310,311).***

**Regarding claim 18-26,** Hassler discloses exhaust gas turbocharger (7) having a housing and having a shaft (Not Shown), which is arranged so as to be capable of rotating about its longitudinal axis in the housing and on which a turbine wheel (the well-known component in the turbine 9) and a compressor wheel (the well-known component in compressor 6) are seated and which is guided in bearings (located in the bearing housing 10); at least one flow duct (via 11), via which at least one bearing gap can have an air stream applied to it, is formed in the housing (See Figure , Abstract, and Paragraph [0019]);

wherein the at least one flow duct opens into a compressor housing (housing of compressor 6) of the turbocharger (7) (See Figure);

wherein the flow duct (via 11) is formed at least in sections by a pipeline running outside the housing (See Figure);

wherein a separate flow duct leads to each of the bearings (See Figure);

wherein the housing has at least one outlet opening (Not Numbered) for the air, which flows through the bearings (See Figure);

a cross section of the flow duct (62, 65) is small in comparison with a cross section of a line, leading to the engine, for the compressed air (See Figure); and

wherein the flow duct (via 11) leads to only one of the bearings, preferably to the turbine-wheel-side bearing (See Figure).

However, Hassler fails to disclose magnetic radial bearings, at least one axial bearing, each bearing having a bearing plate, and the gaps of the bearings.

Andres teaches that it is conventional in the magnetic bearing art, to utilize radial bearings being magnetic bearings (40) and at least one axial bearing (60) the bearings (40, 60) each having a bearing plate (45, 61) which is seated on the shaft (16) and at least one stator (15), which lies axially opposite said bearing (45, 61) plate on at least one side, thus forming a gap between the bearing plate and the stator; and the gaps of the bearings (5, 6, 9) communicating with one another via further flow ducts formed in the housing (Not Numbered, clearly seen in Figures 2, 3, and 5) (See Figures 1-5, Column 4, lines 9-23)

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized magnetic radial bearings, at least one axial bearing, each bearing having a bearing plate, and the gaps of the bearings, as taught by Andres, to improve the efficiency of the Hassler device, since the use thereof would

Art Unit: 3748

have provided the precisely support the shaft rotating at high speed in a high vibration, high shock and high temperature environment.

**Regarding claims 27-33**, the method as claimed would be inherent during the normal use and operation of the modified Hassler device as disclosed in the rejection of claims 18-26.

***Allowable Subject Matter***

Claim 34 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Tecza et al. (US Patent Number 5,521,448) disclose a damping for passive magnetic bearings.
- Mimura (Patent Number JP 57 020985 A) discloses a cooling device of a turbo-supercharger.
- Turansky (Patent Number JP 01 080799 A) discloses a compressor unit.
- Uno (Patent Number JP 03 155357 A) discloses a vertical crow pawl type synchronous generator unit.



Art Unit: 3748

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TTB  
March 29, 2005



Thai-Ba Trieu  
Primary Examiner  
Art Unit 3748